Fermi surface of SnO under pressure

NIELS CHRISTENSEN, AXEL SVANE, Aarhus University — Tin monoxide undergoes a pressure induced insulator-metal transition around 5 GPa. The pressure effects on the electronic band structure, the Fermi surface (FS) and its nesting properties of SnO in the metallic phase have been derived from ab initio calculations within the local density (LDA) and quasiparticle selfconsistent GW (QSGW) approximations. It is found that the topologies of the FS determined by the two approaches are very similar. Nesting occurs between two different sheets of the FS, most pronounced via (1,1,0) Q-vectors connecting the outer electron surface with the hole surface. The present study was motivated by recent observation of superconductivity in SnO under pressure [1].